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Published in:
Journal of Higher Education Service Science and Management

Published: 06/09/2019

Document Version
Publisher's PDF, also known as Version of record

[Link to publication on the UWS Academic Portal](#)

Citation for published version (APA):
Khan, M., Chinnasamy, J., Dakhan, S., & Pongiannan, K. (2019). An investigation of environmental reporting in the oil and gas sector of Pakistan using Global Reporting Initiative's guidelines. *Journal of Higher Education Service Science and Management*, 2(2), [5]. <https://joherd.com/journals/index.php/JoHESSM/article/view/27>

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An investigation of environmental reporting in the oil and gas sector of Pakistan using Global Reporting Initiative's guidelines

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Abstract

The article investigates reporting of environmental protection activities of Oil and Gas (O&G) companies from Pakistan. The content analysis technique was used to evaluate the extent of the coverage of environmental aspects of in annual reports, with the guidance of GRI guidelines. Twelve O&G companies' in Pakistan were investigated for a period of five years. The results generally indicated that there were few companies performed considerably better than the others in reporting of GRI environmental indicators. Nonetheless, majority of the companies noted that there is a low coverage of GRI guidelines. This study offers implications for O&G stakeholders such as company managers, policymakers, and to the local governing bodies in Pakistan.

Keywords: Environmental Reporting, GRI, Oil & Gas Industry, Sustainable Development

1. Introduction

O&G are considered to be significantly important resources and many developing countries are rich with such natural resources (Alazzani & Wan-Hussin, 2013). According to Peck & Sinding (2003) environmental reporting within corporate reports has attracted increased attention since the early 1990s. Berthelot, Coulmont, and Thibault, (2013) define environmental reporting as being "the set of information items that relate to a firm's past, current and future environmental management activities and performance" (p. 2). Jones Jones (2011) argues that environmental reporting acquired great momentum after the sustainable development debate prompted by the Brundtland Report (1987). Reporting of environmental issues has emerged among companies as a consequence of various influence factors such as pressure from stakeholders (Cormier, Ledoux, & Magnan, 2011; Daub, 2007). The environmental reporting provides various benefits such as being able to build better association with stakeholders, attracting ethical investors and developing business in new markets due to enhanced environmental performance (Kolk, 2008). As such, reporting of environmental performance to stakeholders is an important way to communicate information on a company's impact on the environment. It enables a corporation to show its responsibility for environmental activities (Gray, R., Javad, M., Power, D. M., & Sinclair, 2001).

Researchers targeted sustainability reports to analyse the extent and the volume of sustainability reporting of companies (Borga, Citterio, Noci, & Pizzurno, 2009; Cuadrado-Ballesteros, Frías-Aceituno, & Martínez-Ferrero, 2013; Jindrichovska & Purcarea, 2011; Rao, Tilt, & Lester, 2012). This is to test their commitment to the environmental performance. GRI provides extensive list sustainability indicators and O&G companies use it as a tool of corporate reporting of sustainable practices (Alazzani & Wan-Hussin, 2013). However, researchers have questioned this practice where companies are using GRI reporting guidelines for legitimacy purpose rather than actually being a sustainable organisation (Ali, Frynas, & Mahmood, 2017; De Beelde & Tuybens, 2013; Gallardo-Vázquez & Sanchez-Hernandez, 2014). In addition, they use selective GRI indicators for reporting purpose rather than disseminating information on entire set of GRI indicators. This is what drives the aim of this paper to examine the degree of adherence to the specific core indicators of the environmental category. In doing say, the paper wishes to visualise of critical points that demand efforts to improve firm's sustainability performance, and helping an organisation to make their reports a better sustainability management tool.

Naeem and Welford (2009) argue that Pakistan and Bangladesh face severe issues associated with degradation of the environment, and exploitation and abuse of labour and human rights. This leads to questions being asked about the extent to which companies operating in developing countries are devoted to playing their part in sustainable development and protecting the environment. In addition, Sharif & Rashid (2013, p.18) argue that: "Unfortunately, Pakistan is amongst the lists of the countries that are struck by poverty, poor health, illiteracy and natural disasters. There is no doubt in the fact that country like Pakistan fully deserves to have the corporations' involvement in the eradication of social problems". Although, few studies have investigated

reporting practices in Pakistan (Kemp, L. J., and Vinke, 2012; Khan & Hassan, 2019; Naeem & Welford, 2009; Nazir, 2010; Sharif & Rashid, 2014) none of previous studies have investigated the environmental reporting practices of Pakistani O&G companies using GRI guidelines. Alazzani & Wan-Hussin (2013) argue that GRI guidelines provides “robust and readily” instrument for reporting of all aspects of environmental activities. GRI guidelines assist to benchmark companies reporting practices about prevailing environmental issues (Legendre & Coderre, 2013). In order to fill this gap and understand business activities on environmental protection, this study attempts to examine the voluntary environmental reporting practices of Pakistan’s O&G companies. This was done to contribute into literature from a strategically important developing country Pakistan’s environmentally sensitive industry O&G. In order to address above questions, this study explores relevant literature in the next section. Then following the study will discuss the outline of the methodology used; the third section examines the results and discusses the analysis; and the fourth section provides conclusions and recommendation for further studies.

2. Literature Review

Environmental reporting is a comparatively recent and poorly investigated element of corporate disclosure, particularly in developing countries (Djajadikerta & Trireksani, 2012; Gray, R., Javad, M., Power, D. M., & Sinclair, 2001; Jenkins & Yakovleva, 2006; Neu, Warsame, & Pedwell, 1998; Qiu, Shaikat, & Tharyan, 2016). According to Zhang, Mauzerall, Zhu, Liang, Ezzati, and Remais, (2009) there has been much research conducted in developed countries such as the UK, Australia and USA, into companies’ disclosure on environmental issues and steps taken for environmental protection. Campbell (2004) used longitudinal content analysis to investigate environmental reporting of UK companies. The results indicate a growth of voluntary environmental reporting over 27 years. The growth is significantly correlated with membership of environmental lobbies. Similarly, Brammer & Pavelin (2008) investigated environmental reporting of UK companies using longitudinal content analysis. The results indicate that a firm’s size, and the nature of its business activities, determines the quality of environmental reporting. Higher quality is associated with larger firms and those whose business is interrelated with environmental concerns. In contrast to developed countries, developing nations are lacking behind as well as producing low reporting in their reports. Belal (2000) investigated Bangladeshi companies- he found that environmental disclosure in reports is noteworthy and appreciable, however, it was noted in most cases that the quality and quantity of disclosures is low and poor. (Eljayash, James, & Kong, 2012) argue that differences found in environmental reporting between Arab oil exporting countries. However, environmental reporting in Arab oil countries is still considerably lower than in developed countries. Likewise, de Villiers & Staden (2006) investigated mining companies of South Africa using content analysis technique. The results indicate an observed reduction in environmental reporting, following an initial period of increase for both mining companies and Top 100 industrial company. Ullah, Hossain, & Yakub, (2014) reveals in their study of Bangladesh’s textile industry that more than two-third selected companies failed to address environmental issues in their reports. Besides, very poor disclosed information was found regarding environmental aspects. In regards to Pakistan, only two recent studies were found that investigated CSR reporting practices of aviation and Banking industries. Sharif & Rashid, (2013) found moderate CSR reporting practices, yet, adequate to be called banking industry as responsible corporation. On the other hand, the study of Kemp & Vinke, (2012) reveals that inadequate evidences of disclosure were found in the aviation industry of Pakistan. In addition, companies found to be providing information on social and economic aspects of CSR, while less evidence of environmental disclosure were noted in company reports and websites. However, the study claims that “Our research fills a critical gap in research by presenting data from Pakistan”(p, 287) , additionally, they suggested to conduct more research into CSR in Pakistan because of the dearth of literature on CSR and sustainability within developing country in general and particularly in Pakistan. The study conducted in Yemen’s O&G industry by Alazzani and Wan-Hussin (2013) using content analysis of environmental reporting against GRI guidelines. The results show that selected companies reasonably disclose about environmental protection practices in compliance with GRI guidelines. Some of the recent studies have been conducted on the O&G sector (see Gaudencio et al., 2018; Khan & Hassan, 2019) which highlights the importance of examining the level of environmental reporting in this environmental sensitive industry. As the trend in environmental reporting in developed and developing countries have increased significantly over the last ten years as a result of persistent pressure from stakeholders and government. In addition, rapid changes in climate have been noted, and related to the negligence of companies not justifying their practices, especially in developing countries. This warrants further investigation, especially in relation to environmentally sensitive industries such as O&G.

3. Methodology

To determine information relevant to the environment, this paper follows GRI guidelines of environmental reporting aspects as the basis for analysing information in the companies' annual reports. GRI guidelines propose comprehensible definitions of each important environmental aspects; which allows easier process of enhancing the environmental performance (Alazzani & Wan-Hussin, 2013). A review of previous studies indicates that researchers have utilised GRI guidelines to measure environmental reporting (see Alazzani & Wan-Hussin, 2013; Endrikat, Guenther, & Hoppe, 2014; Fernando, 2014). A longitudinal period analysis were performed as to analyse the extent of coverage of GRI environmental indicators. Besides, to understand difference among reporting practices in different years. Therefore, we selected five years period between 2010 and 2014 to investigate the state of environmental reporting practice in O&G industry.

The sample companies for this paper include only O&G industry of Pakistan, listed on Pakistan Stock Exchange. O&G companies were selected as they are an environmentally sensitive industry in Pakistan. In addition, relying on three further criteria; (1) companies within O&G sector, (2) companies who have made a commitment to consider the environment, (3) availability of their reports. In addition, we neither considered firm size nor their downstream/upstream business for selection process. Due the fact, that Pakistan's O&G industry holds small number of companies, in total 13 companies; we selected all companies in the sample except one due to unavailability of reports. From the list of 13 companies, after excluding one company, a sample of 12 companies were considered for analysis (see table 1).

Content analysis is defined as "a research technique for making replicable and valid inferences from data according to their context" (Krippendorff, 1980, p. 21). This involves copying the object under being investigation into different categories (environmental reporting) on the basis of pre-defined criteria (GRI guidelines). As this paper analyse the contents of environmental information reported by companies, this method deemed suitable.

The environmental information was measured using the GRI guidelines, for that reason we developed an index of 30 GRI indicators for environmental reporting (See Appendix 1). GRI indicators covers full environmental related information that company should consider in their environmental management system. In addition, GRI indicators were also improved than its previous version and it is now acceptable in developed and developing countries. A GRI guideline provides information on wider and significantly important environmental issues globally such as, energy, waste management, water management, biodiversity, material, etc. Such issues are prominent in the case of Pakistan and increasing every year with having severe negative impact on environment, species and human life (Khilji & Matthews, 2012). It would be interesting to know how O&G companies are dealing with such issues in Pakistan. In other words, whether these companies actively working or ignoring on these issues which GRI offers already. Jung et al. (2001) and Morhardt et al. (2002) observe that GRI presents good list of environmental indicators and they carried out the analysis using these guidelines to create the index. If an indicator was available on the selected source, that item was considered as being 'disclosed' and numbered with a value of 1. Undisclosed indicators were numbered with a value of 0. In addition, each indicator and source of information was investigated carefully to reduce instances of error. Content analysis is not free from limitations- laborious process. Few common issues are: omission while undertaking content analysis and inconsistency in employing the checklist (Krippendorff, 2004). In this study two researchers independently analysed the reporting mediums to test the instrument and to find any discrepancies. In result, insignificant differences were identified that then was a subject or review.

4. Results

Table 1 shows the number of GRI index items disclosed by the O&G companies of Pakistan during the study period (2010-2014). It can be noted that small number of companies covered significant number of environmental aspects that GRI guidelines offers.

Table 1: GRI indicators disclosed by sample companies annually

Companies	2010	2011	2012	2013	2014	Total	Average
Attock Refinery	0	0	30	30	30	90	18
Burshane LPG	1	1	1	1	3	7	1.4
Byco Petroleum	1	1	1	2	3	8	1.6
Mari Petroleum	2	2	1	1	3	9	1.8
National Refinery	0	0	1	3	10	14	2.8
Oil & Gas Development	1	1	2	1	1	6	1.2
Pakistan Oilfields	5	5	6	2	4	22	4.4
Pakistan Petroleum	1	2	2	2	4	11	2.2
Pakistan Refinery	2	2	2	4	3	13	2.6
Pakistan State Oil Company	3	0	0	4	3	10	2
Shell Pakistan	20	21	22	20	21	104	20.8
Sui Northern Gas Pipelines	2	3	4	4	4	17	3.4

Overall, many companies in our sample overlooked many important environmental related aspects. The table above indicates majority of companies' disclosure reported between two and three (on average) environmental aspects listed in GRI environmental index. In addition, longitudinal period analysis revealed that companies consistently did not disclose all GRI listed environmental aspects except a couple of companies. This consistent with results of (Ahmad & Gao, 2005; Ataur Rahman Belal, 2000; Rajapakse, 2002). It was expected that O&G companies may maintain various aspects of environmental disclosures due the reason of being extremely environmental sensitive industry (Peck & Sinding, 2003). However, it is interesting to note that overall the coverage of environmental related issues has risen during the study time while comparing with indicators reported in 2010 and 2014. It shows that overall there has been an increase in the coverage of environmental aspects in the company reports.

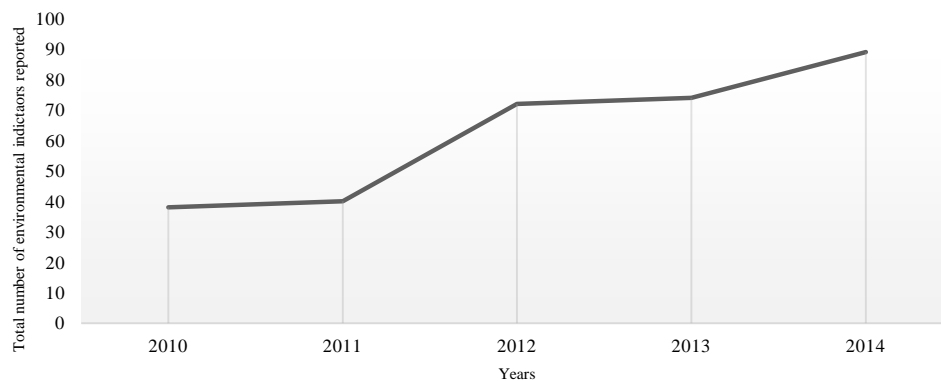


Fig 1: Total GRI index items reported annually

Figure 1 shows a significant increasing trend in the disclosure of environmental aspects in the year 2012 with an 89.47% increase on the previous year, and a subsequent upward trend over the remainder of the study period. It can be argued that this trend emphasises the increased awareness of corporate environmental responsibility by O&G companies in Pakistan. Despite the fact the quantity of reported GRI indicators has increased over the years, by looking at table 3 it shows that there remains companies with considerably less environmental disclosure. It can be argued that the status of environmental protection in O&G companies of Pakistan relatively low in majority of companies. It is important to find what specific disclosure has received more attention from the companies. Therefore, the next set analysis reveals the preferred GRI indicators by the companies.

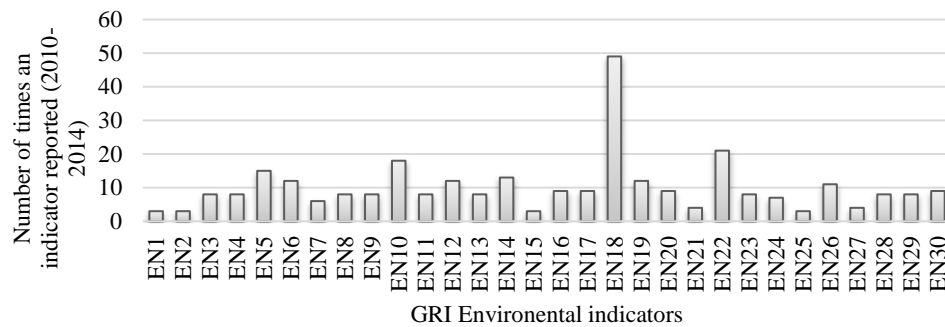


Fig 2: No. of Times disclosed GRI G3 Indicators

Figure 2 and table 4 shows that only four indicators are not reported by any of the companies with the exception of ARL; Material used, Material recycled, Number of red list species (biodiversity) and percentage of products sold and packaging reclaimed; it is possible that these indicators are less relevant or difficult to collect. The only indicator disclosed by all sample companies was EN18 (initiatives to reduce greenhouse gas emission). Similarly, indicator EN22 (Total waste of weight and disposal method) was addressed by eight sample companies. Overall, less than half of the sample companies failed to cover the full GRI G3 indicators with the exception of ARL which addressed each indicator in detail. The noteworthy reason of using GRI guidelines to analyse companies performance was to cover overall environmental aspects such as indicators regarding biodiversity and material used etc which have significant importance within a developing countries and have been the centre of debate.

A significant contribution to climate change is the corrosion of waste water which results in emission of greenhouse gases. Milich (1999) argues that “greenhouse gases also insidiously damaging to human and ecosystem health” (p. 199). The findings indicate that Initiatives to reduce greenhouse gas emissions and reductions achieved- was disclosed in all sample companies and considered to be most important aspect for all selected O&G companies. Equally important, water related aspects since communities and species depend on water sources for their livelihood were disclosed inadequately in selected companies. Likewise, selected O&G companies in Pakistan disclosed least regarding materials used and recycled, only two companies presented information on material aspects of GRI checklist. Moreover, biodiversity disclosure remains low in Pakistan’s O&G companies; no more than four companies disclosed on aspects of biodiversity. The indicator EN14 (strategies, actions taken and future plans to manage their operational impact on biodiversity) was disclosed on a total of thirteen times.

5. Discussion

Despite the fact there is now an increase in the number of reported indicators in companies reports, the report analysed have generally varying formats, quality and adherence to the GRI listed standards. Overall, extent and the quality of reporting remains low and many companies overlooked the disclosure of important environmental issues. For instance, impact of their business on biodiversity, used material and waste management and product’s impact on environment. This could be because of a general lack of awareness on the several environmental issues in developing countries (Ariyanto & Nixon, 2011; Ataur Rahman Belal, Cooper, & Khan, 2015). As we noted that the multinational and large organisations tend to disclose a number of GRI environmental indicators. Brammer & Pavelin (2008) argue that larger companies disclose more information relating to environmental performance. Whereas, local companies appeared to disclose on only some specific indicators such as controlling GHG Emissions. It could also be because of a lack of pressure on the companies in Pakistan country as reporting still remains a voluntary activity in a number of developing countries (A. Belal & Momin, 2009; Ataur R. Belal & Roberts, 2010; Ataur Rahman Belal et al., 2015). The govern especially does not show urgency or need for environmental management in a less developed country as they are already facing a number of challenges in the country such as poverty, hunger, terrorism and corruption which receives more attention than environmental issues. On the other hand, companies that do disclose a number of GRI indicators might be encouraged by the desire for legitimacy. As the reason behind companies’ disclosure regarding strategies, plans and impact of their operations on biodiversity, emissions, water management, is to enhance reputation rather

than to actually restore and protect habitats or to avoid waste. Belal (2000) argues that the reason behind these voluntary disclosures might be to enhance reputation of company in the eyes of stakeholder.

The serious scenario of environment protection debate forces businesses to be more competitive and innovative. Businesses of developing countries need to reinforce their business antiquates and agendas which would assist them to obtain more investments for their economic well-being. Likewise, every corporation desired to maintain their network locally and internationally, for that reason, companies require to follow global trends, with voluntary reporting of environmental issues is one of them. Sustainability and environmental issues considered to be most alarming issues, and Pakistan is more vulnerable to such issues. However, responding to these issues may facilitate Pakistan to attract foreign investment as well as assist to penetrate in international markets for the betterment of its economy. As Sumiani, Haslinda, & Lehman (2007) assert that environmental performance is one of the key advantages in dynamic corporate competition.

6. Conclusion

The study measures the extent to which GRI indicators were disclosed in O&G companies of Pakistan. Content analysis revealed that the level of GRI indicators disclosed has increased. An enhancement in environmental reporting practices has been noted in across all sample companies and disclosure regarding emissions, waste water recycling or disposal, energy efficiency and usage were noted to be considerably consistent and increasing. This indicates companies' responsibility towards environmental performance, as these aspects are significantly associated with changes in the climate. However, the quantity and quality of environmental reporting still remains inadequate in the majority of the O&G companies of Pakistan as with the exception of two companies, none of the other companies attempted to produce sufficient coverage of GRI indicators. In addition, disclosing only desired aspects of environmental protection to enhance company reputation does not fulfil accountability in terms of companies' environmental performance. This aligns with the findings of Sahay (2004) that good work is conducted for environmental reporting by some industries. However, reports appear to be concerned spreading publicity rather than providing environmental facts and figures. The majority of companies still need to improve disclosure practices, which can be achieved by presenting separate voluntary reports as per GRI standards because of its universality and readily available information on a number of crucial environmental aspects. GRI reporting guidelines also significantly increases the quality and quantity of disclosure as was noted in case of the two companies that produced regular sustainability reports. Voluntary adoption increases transparency credibility in sustainability reporting and comparability, as well as allowing stakeholders to access relevant information for decision making. Professional bodies (WWF and ACCA) and government in Pakistan should support the adoption of GRI guidelines for reporting standards as these guidelines provide a rigorous voluntary tool for comprehensive reporting practices, and are regularly updated to ensure that they are feasible to employ. Corporate philanthropy for environment, as well social and economic dimensions, is urgently required in O&G companies.

The study definitely has a few limitations, first it only deals with Pakistan's O&G companies therefore its results cannot be generalised with other industries. Despite, we included all O&G companies list on stock exchange; the sample is still yet small. In addition, errors or omissions of relevant information may have occurred during scoring the disclosure. Subjectivity issue is very common while performing content analysis and this may have been occurred during data collection process. The conclusions of this study may not relate to other companies operating in Pakistan. The future researchers can consider larger sample and other sectors can also be added, or comparisons with other developed and developing countries industry can be drawn. Moreover, In-depth study would be immensely useful to know the perceptions of the managers dealing with environmental activities and its reporting- an interview technique would be suitable. Finally, in developing country social aspects of corporate responsibility has immense importance therefore, future researcher can investigate the role of companies towards social responsibility.

A.1. GRI Environmental reporting indicators

GRI INDICATORS	
MATERIAL	
EN1	Materials used by weight or volume
EN2	Percentage of materials used that are recycled input materials
ENERGY	
EN3	Direct energy consumption by primary energy source
EN4	Indirect energy consumption by primary source
EN5	Energy saved due to conservation and efficiency improvements
EN6	Initiatives to provide energy efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives
EN7	Initiatives to reduce indirect energy consumption and reductions achieved
WATER	
EN8	Total water withdrawal by source
EN9	Water sources significantly affected by withdrawal of water
EN10	Percentage and total volume of water recycled and reused
BIODIVERSITY	
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas
EN13	Habitats protected or restored
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk
EMISSIONS, EFFLUENTS, AND WASTE	
EN16	Total direct and indirect greenhouse gas emissions by weight
EN17	Other relevant indirect greenhouse gas emissions by weight
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved
EN19	Emissions of ozone-depleting substances by weight
EN20	NO, SO, and other significant air emissions by type and weight
EN21	Total water discharge by quality and destination
EN22	Total weight of waste by type and disposal method
EN23	Total number and volume of significant spills
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff
PRODUCT AND SERVICES	
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation
EN27	Percentage of products sold and their packaging materials that are reclaimed by category
COMPLIANCE	
EN28	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations
TRANSPORT	
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce
OVERALL	
EN30	Total environmental protection expenditures and investments by type

References

- Ahmad, N. S., & Gao, S. S. (2005). Corporate environmental reporting in Libya: A study of absence. *Social and Environmental Accountability Journal*, 25(1), 11–14.
- Alazzani, A., & Wan-Hussin, W. N. (2013). Global Reporting Initiative's environmental reporting: A study of oil and gas companies. *Ecological Indicators*, 32, 19–24.
- Ali, W., Frynas, J. G., & Mahmood, Z. (2017). Determinants of Corporate Social Responsibility (CSR) Disclosure in Developed and Developing Countries: A Literature Review. *Corporate Social Responsibility and Environmental Management*, 24(4), 273–294.
- Ariyanto, G., & Nixon, M. (2011). CSR of MNCs in Pakistan. *Proc. Int. Joint Conf. Biometrics*.
- Belal, A., & Momin, M. (2009). Corporate social reporting (CSR) in emerging economies: A review and future direction. In *Accounting in Emerging Economies* (pp. 119–143). Emerald Group Publishing Limited.
- Belal, A. R. (2000). Environmental reporting in developing countries: empirical evidence from Bangladesh. *Eco- Management and Auditing: The Journal of Corporate Environmental Management*, 7(3), 114–121.
- Belal, A. R., Cooper, S. M., & Khan, N. A. (2015). Corporate environmental responsibility and accountability: What chance in vulnerable Bangladesh? *Critical Perspectives on Accounting*, 33, 44–58.
- Belal, A. R., & Roberts, R. W. (2010). Stakeholders' Perceptions of Corporate Social Reporting in Bangladesh. *Journal of Business Ethics*, 97(2), 311–324.
- Berthelot, S., Coulmont, M., & Thibault, K. (2013). Sustainability Content on Oil and Gas Company Websites. *Business and Management Research*, 2(1), 94–103.
- Borga, F., Citterio, A., Noci, G., & Pizzurno, E. (2009). Sustainability Report in Small Enterprises: Case Studies in Italian Furniture Companies. *Business Strategy and the Environment*, 176(December 2006), 162–176.
- Brammer, S., & Pavelin, S. (2008). Factors influencing the quality of corporate environmental disclosure. *Business Strategy and the Environment*, 17(2), 120–136.
- Campbell, D. (2004). A longitudinal and cross-sectional analysis of environmental disclosure in UK companies—a research note. *The British Accounting Review*, 36(1), 107–117.
- Cormier, D., Ledoux, M.-J., & Magnan, M. (2011). The informational contribution of social and environmental disclosures for investors. *Management Decision*, 49(8), 1276–1304.
- Cuadrado-Ballesteros, B., Frías-Aceituno, J., & Martínez-Ferrero, J. (2013). The role of media pressure on the disclosure of sustainability information by local governments. *Online Information Review*, 38(1), 114–135.
- Daub, C.-H. (2007). Assessing the quality of sustainability reporting: an alternative methodological approach. *Journal of Cleaner Production*, 15(1), 75–85.
- De Beelde, I., & Tuybens, S. (2013). Enhancing the credibility of reporting on corporate social responsibility in Europe. *Business Strategy and the Environment*, 24(3), 190–216.
- de Villiers, C., & van Staden, C. J. (2006). Can less environmental disclosure have a legitimising effect? Evidence from Africa. *Accounting, Organizations and Society*, 31(8), 763–781.
- Djajadikerta, H. G., & Trireksani, T. (2012). Corporate social and environmental disclosure by Indonesian listed companies on their corporate web sites. *Journal of Applied Accounting ...*, 13(1), 21–36.
- Eljayash, K. M., James, K., & Kong, E. (2012). The Quantity and Quality of Environmental Disclosure in Annual Report of National Oil and Gas Companies in Middle East and North Africa. *International Journal of Economics and Finance*, 4(10), 201–217.
- Endrikat, J., Guenther, E., & Hoppe, H. (2014). Making sense of conflicting empirical findings: A meta-analytic review of the relationship between corporate environmental and financial performance. *European Management Journal*, 32(5), 735–751.
- Fernando, A. (2014). Corporate social responsibility disclosures in an emerging economy: case study of a tobacco company in Sri Lanka. *Journal for Global Business Advancement*, 7(3), 236–248.

- Gallardo-Vázquez, D., & Sanchez-Hernandez, M. I. (2014). Measuring Corporate Social Responsibility for competitive success at a regional level. *Journal of Cleaner Production*, 72, 14–22.
- Gaudencio, L. M. A. L., de Oliveira, R., Curi, W. F., Santana, C. F. D., Silva, J. N., & Meira, C. M. B. S. (2018). Oil and gas companies operating in Brazil adhere to GRI-G4 essential sustainability indicators: a critical review. *Environment, Development and Sustainability*, 1-22.
- Gray, R., Javad, M., Power, D. M., & Sinclair, C. D. (2001). Social and environmental disclosure and corporate characteristics: a research note and extension. *Journal of Business Finance & Accounting*, 28(3–4), 327–356.
- Jenkins, H., & Yakovleva, N. (2006). Corporate social responsibility in the mining industry: Exploring trends in social and environmental disclosure. *Journal of Cleaner Production*, 14, 271–284.
- Jindrichovska, I., & Purcarea, I. (2011). CSR and Environmental Reporting in the Czech Republic and Romania: Country Comparison of Rules and Practices. *Accounting and Management Information Systems*, 10(2), 202–227.
- Jones, M. J. (2011). The nature, use and impression management of graphs in social and environmental accounting. *Accounting Forum*, 35(2), 75–89.
- Kemp, L. J., and Vinke, J. (2012). CSR reporting: a review of the Pakistani aviation industry. *South Asian Journal of Global Business Research*, 1(2), 276–292.
- Khan, M., & Hassan, A. (2019). Environmental Reporting in Pakistan's Oil and Gas Industry. *International Research Journal of Business Studies*, 12(1), 15–29.
- Khilji, S. E., & Matthews, C. D. (2012). Editor's perspective: Published South Asian research: current standing and future directions. *South Asian Journal of Global Business Research*, 1(2), 154–176.
- Kolk, A. (2008). Sustainability, accountability and corporate governance: exploring multinationals' reporting practices. *Business strategy and the environment*, 17(1), 1-15.
- Krippendorff, K. (1980). *Content analysis: An introduction to its methodology*. London: Sage Publications.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. London: SAGE Publications.
- Legendre, S., & Coderre, F. (2013). Determinants of GRI G3 Application Levels: The Case of the Fortune Global 500. *Corporate Social Responsibility and Environmental Management*, 20(3), 182–192.
- Milich, L. (1999). The role of methane in global warming: where might mitigation strategies be focused? *Global Environmental Change*, 9(3), 179–201.
- Naeem, M. A., & Welford, R. (2009). A comparative study of corporate social responsibility in bangladesh and pakistan. *Corporate Social Responsibility and Environmental Management*, 16(2), 108–122.
- Nazir, M. (2010). Corporate Social Disclosure in Pakistan: A Case Study of Fertilizers Industry. *Journal of Commerce*, 2(1), 1–11.
- Neu, D., Warsame, H., & Pedwell, K. (1998). Managing Public Impressions: Environmental Disclosures in Annual Reports. *Accounting, Organizations and Society*, 23(3), 265–282.
- Peck, P., & Sinding, K. (2003). Environmental and social disclosure and data richness in the mining industry. *Business Strategy and the Environment*, 12(3), 131–146.
- Qiu, Y., Shaukat, A., & Tharyan, R. (2016). Environmental and social disclosures: Link with corporate financial performance. *British Accounting Review*, 48(1), 102–116.
- Rajapakse, B. (2002). Environmental reporting practices: Evidence from Sri Lanka. *Social and Environmental Accountability Journal*, 22(2), 3–4.
- Rao, K. K., Tilt, C. a., & Lester, L. H. (2012). Corporate governance and environmental reporting: an Australian study. *Corporate Governance*, 12(2), 143–163.
- Sahay, A. (2004). Environmental reporting by Indian corporations. *Corporate Social Responsibility and Environmental Management*, 22, 12–22.
- Sharif, M., & Rashid, K. (2014). Corporate governance and corporate social responsibility (CSR) reporting: an empirical evidence from commercial banks (CB) of Pakistan. *Quality & Quantity*, 48(5), 2501–2521.

- Sumiani, Y., Haslinda, Y., & Lehman, G. (2007). Environmental reporting in a developing country: a case study on status and implementation in Malaysia. *Journal of Cleaner Production*, 15(10), 895–901.
- Ullah, H., Hossain, M., & Yakub, K. M. (2014). Environmental Disclosure Practices in Annual Report of the Listed Textile Industries in Bangladesh. *Global Journal of Management And Busine*